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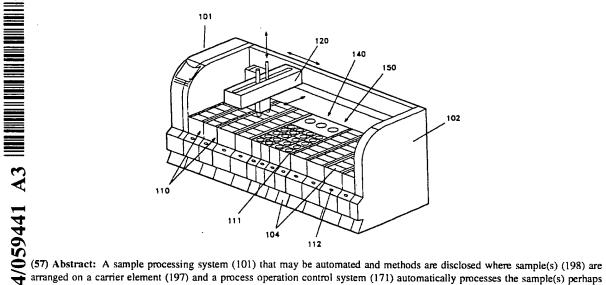
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[Continued on next page]

(54) Title: INFORMATION NOTIFICATION SAMPLE PROCESSING SYSTEM AND METHODS OF BIOLOGICAL SLIDE **PROCESSING**



arranged on a carrier element (197) and a process operation control system (171) automatically processes the sample(s) perhaps robotically with an operationally-influential exteriorly-consequential information monitor (402) or a data capture element (414). Significant process details as well as operationally-influential exteriorly-consequential information may be monitored and an automatic notice element (404) may cause notification of a person at some display (415) that may be remote. Various people may be notified, such as an administrator, a supplier, or a manufacturer of an opportunity for some action such as reagent reordering or the like. A simulated motion display may be included to "watch" simulated operation in real time or long after completion of the actual processing.

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A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : G01N 31/00					
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B. FIEL	DS SEARCHED				
Minimum documentation searched (classification system followed by classification symbols) U.S.: Please See Continuation Sheet					
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched					
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet					
	UMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where ap		Relevant to claim No.		
Y	US 4, 018,565 A (Fletcher, III et al) 19 April 1977 (19.04.1977), Abstact.	26, 40, 41, 68, 82, 83		
Y	US 4,404,641 A (Bazarnik) 13 September 1983 (13.0-9.1983), column 1, line 54 - column 1, 12, 53, 54 2, line 25.				
Y	US 4,539,632 A (Hansen et al) 3 September 1985 (03.09.1985), Abstract; column 1, line 59 29, 32, 71, 74 - column 2, line 28.				
Y	US 4,886,590 A (Tittle) 12 December 1989 (12.12.1989), column 2, lines 16-38.		15, 33-36, 39, 57, 75- 78, 80		
Y	US 4,986,891 A (Sarrine et al) 22 January 1991 (22.01.1991), column 8, lines 20-29.		7, 33, 49, 75		
Y			91-93, 96-98, 128-130, 133-135		
Further	documents are listed in the continuation of Box C.	See patent family annex.			
* s	pecial categories of cited documents:	"T" later document published after the intr			
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INTERNATIONAL SEARCH REPORT

ategory *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X - Y	US 5,289,385 A (Grandone) 22 February 1994 (22.02.1994), column 5, line 66 - column 6, line 36; column 7, lines 36-45; column 10, line 18 - column 11, line 10.	1, 43, 85, 92, 96, 97 122, 129, 133, 134
•		2-23, 26-42, 44-65, 68-84, 86-91, 93-95 98-106, 110-116, 120 121, 123-128, 130- 132, 135-143, 147- 153, 157, 158
Y	US 5,316,726 A (Babson et al) 31 May 1994 (31.05.1994), column 2, lines 43-56; column 3, lines 3-6; column 5, lines 9-31; column 6, lines 3-20.	3, 45, 87, 112, 114 124, 149, 151
Y	US 5,355,304 A (DeMoranville et al) 11 October 1994 (11.10.1994), column 5, lines 29-43.	110, 147
Y	US 5,366,896 A (Margrey et al) 22 November 1994 (22.11.1994), Abstract.	5, 47, 89, 111, 113 126, 148, 150
Y	US 5,449,622 A (Yabe et al) 12 September 1995 (12.09.1995), Abstract.	99-104, 136-141
X - Y	US 5,473,551 A (Sato et al) 5 December 1995 (05.12.1995), Abstract; Figure 1; column 2, line 30 - column 4, line 3.	1, 7, 11-14, 26, 28 43, 49, 53-56, 68, 7
		2-6, 8-10, 15-23, 2 29-42, 44-48, 50-52 57-65, 69, 71-84, 92 96, 98, 112, 129, 13 135, 149
Y	US 5,958,341 A (Chu) 28 September 1999 (28.09.1999), column 4, lines 33-50.	2, 3, 44, 45, 86, 87
Y	US 6,019,945 A (Ohishi et al) 1 February 2000 (01.02.2000), column 9, lines 6-42.	123, 124 26, 27, 41, 42, 68,
Y	US 6,097,995 A (Tipton et al) 1 August 2000 (01.08.2000), column 35, line 47 - column 36, line 4.	69, 83, 84, 93, 130 16-19,58-61
Y,P	US 6,509,193 B1 (Tajima) 21 January 2003 (21.01.2003), column 15, lines 19-38.	7-12, 49-54
Y,P	US 6,548,822 B1 (Morris et al) 15 April 2003 (15.04.2003), column 2, lines 23-43.	37-39, 79-81
Y V	US 2002/0091593 A1 (Fowler) 11 July 2002 (11.07.2002), paragraphs 34, 50-54.	29, 30, 71, 72
Y,P	US 2003/0032048 A1 (Kim et al) 13 February 2003 (13.02.2003), paragraphs 12, 215.	116, 120, 121, 153
X,P	US 2003/0099573 A1 (Tseung et al) 29 May 2003 (29.05.2003), paragraphs 28-30.	157, 158 1-6, 43-48
Y,P		7-23, 26-42, 49-65 68-84
Y,P	US 2003/0162221 A1 (Bader et al) 28 August 2003 (28.08.2003), paragraph 218.	91, 94, 95, 128, 13
Y,P	US 2003/0200111 A1 (Damji) 23 October 2003 (23.10.2003), paragraph 54.	132 20-23, 62-65

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INTERNATIONAL SEARCH REPORT	
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Continuation of B. FIELDS SEARCHED Item 1:	
702/19, 21-32, 81-84, 176-178, 182, 184, 185, 187, 188; 700/266, 267; 436/46,	, 49, 50; 422/63, 67; 340/3.1, 3.3, 3.31, 3.32, 3.9
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Continuation of B. FIELDS SEARCHED Item 3:	
USPAT, US-PGPUB, JPO, DERWENT, EPO, IBM_TDB	
search terms:automatic automated sample process processing preparation, titratic	on, staining, deparaffinization, target retrieval, reagent
application, robot, robotic, monitor, alert, notify, alarm, supplier, expiration, hi	storical usage, total reagent, predictive usage, efficacy,
segmented computer file, read only file, integral change, common format, propie	etary format, software selection, playback
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